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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,809	11/26/2003	Eunsoo Shim	02003	8121

7590 03/22/2006

NEC Laboratories America, Inc.
4 Independence Way
Princeton, NJ 08540

EXAMINER	
SABOURI, MAZDA	

ART UNIT	PAPER NUMBER
2617	

DATE MAILED: 03/22/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/722,809	SHIM ET AL.	
	Examiner	Art Unit	
	Mazda Sabouri	2642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 November 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-31* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-31* is/are rejected.

7)☒ Claim(s) ~~2~~ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *26 November 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Objections

1. Claim 5 objected to because of the following informalities: The terms "the first access router" and "the second access router" lack antecedent basis. Examiner will interpret the word "router" as -node- so that the claim can be properly addressed. Appropriate correction is required.

Claim Rejections - 35 USC § 102

> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 21,26 and 29 rejected under 35 U.S.C. 102(b) as being anticipated by US 2000/6119005 (Smolik).

3. As to claim 21, Smolik teaches a method comprising the step of receiving a candidate access node list (list of viable pilot channel candidates) from a mobile terminal. The method further comprises updating the candidate access node list (the neighbor list) to reflect nodes discovered by the mobile terminal (see Smolik, column 1, lines 62-67 and column 2, lines 1-37). The method further comprises providing an updated candidate list to the mobile terminal (see Smolik, column 5, lines 51-61). Note that the examiner interprets the 'updated neighbor list' as reading on an 'updated candidate list'. Smolik teaches that the candidate list is derived (within the mobile terminal) from the neighbor list (see Smolik, column 9, lines 48-67 and column 10, lines 1-47).

4. As to claim 26, Smolik teaches an access node (base station) having memory and processing means for performing the step of receiving a candidate access node list

(list of viable pilot channel candidates) from a mobile terminal. There is memory and processing means for performing the step of updating the candidate access node list (the neighbor list) to reflect nodes discovered by the mobile terminal (see Smolik, column 1, lines 62-67 and column 2, lines 1-37). There is memory and processing means for performing the step of providing an updated list to the mobile terminal (see Smolik, column 5, lines 51-61). Note that the examiner interprets the 'updated neighbor list' as reading on an 'updated candidate list'. Smolik teaches that the candidate list is derived (within the mobile terminal) from the neighbor list (see Smolik, column 9, lines 48-67 and column 10, lines 1-47).

5. As to claim 29, Smolik teaches a mobile terminal having memory and processing means for performing the step of receiving a candidate access node list (list of viable pilot channel candidates) from a mobile terminal. There is memory and processing means for performing the step of updating the candidate access node list (the neighbor list) to reflect nodes discovered by the mobile terminal (see Smolik, column 1, lines 62-67 and column 2, lines 1-37). There is memory and processing means for performing the step of providing an updated list to the mobile terminal (see Smolik, column 5, lines 51-61). Note that the examiner interprets the 'updated neighbor list' as reading on an 'updated candidate list'. Smolik teaches that the candidate list is derived (within the mobile terminal) from the neighbor list (see Smolik, column 9, lines 48-67 and column 10, lines 1-47).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7. Claims 22,27 and 30 rejected under 35 U.S.C. 103(a) as being unpatentable over US 2000/6119005 (Smolik) in view of US 2003/6600917 (Maupin). What is lacking is a bitmap table being used to store the candidate node list. Maupin teaches base stations storing information into bitmaps and sending those bitmaps to mobile terminals (see Maupin, column 2, lines 64-67 and column 3, lines 1-20). The motivation for using this teaching can be found in Maupin. Maupin teaches that the mobile terminals decode the bitmaps in order to retrieve the relevant information (see Maupin, column 2, lines 64-67). The use of the word "decode" reads on the bitmaps providing some level of security for the information. It would have been obvious to one of ordinary skill in the arts at the time the invention was made to combine the teachings of Maupin into those of Smolik, for the reasons mentioned above.

8. Claims 25 and 31 rejected under 35 U.S.C. 103(a) as being unpatentable over US 2000/6119005 (Smolik) in view of US 2002/6487406 (Chang et al.). What is lacking is the use of IP devices as mobile terminals and IP routers as access nodes. The method and system of Smolik does not specify what type of wireless communication system is being used. Chang teaches that in wireless communication systems, IP devices (laptops) can be used as mobile terminals. Chang further teaches that IP

routers are used to connect the mobile terminals to an IP network (see Chang, column 3, lines 60-67 and column 4, lines 1-67 and column 5, lines 1-60). The motivation for using this teaching can be found in Chang. Chang teaches that it is important for mobile terminals to have access to the Internet (see Chang, column 1, lines 16-30). It would have been obvious to one of ordinary skill in the arts at the time the invention was made to combine the teachings of Chang into those of Smolik for the reasons mentioned above.

9. Claim 23 rejected under 35 U.S.C. 103(a) as being unpatentable over US 2000/6119005 (Smolik) in view of US 2004/6813357 (Matsuzaki et al.). What is lacking from Smolik is the step of digitally signing the candidate list prior to sending the candidate list to the mobile terminal. Matsuzaki teaches that data sent from an access node (base station) to a mobile terminal is digitally signed (see Matsuzaki, column 16, lines 13-57). The motivation for using a digital signature can be found in Matsuzaki. Matsuzaki teaches that digital signatures guard against third party tampering (see Matsuzaki, column 16, lines 13-17). Matsuzaki further teaches that the use of digital signatures enhances the role of base stations. Base stations can be made to hold private information (in addition of public information) that can only be accessed by an authorized terminal (see Matsuzaki, column 16, lines 58-61). It would have been obvious to one of ordinary skill in the arts at the time the invention was made to combine the teachings of Matsuzaki into those of Smolik, for the reasons mentioned above.

10. Claim 24 rejected under 35 U.S.C. 103(a) as being unpatentable over US 2000/6119005 (Smolik) in view of US/2002/6370380 (Norefors et al.). What is lacking from Smolik is the step of establishing a key for secure message exchange before communicating with the mobile terminal. Norefors teaches a method for establishing a secure message exchange between a mobile terminal and an access node prior to communication (see Norefors, SUMMARY). The motivation for using Norefors teachings can be found in Norefors. Norefors teaches that establishing a secure message exchange prevents unauthorized third party intrusions (see Norefors, SUMMARY). It would have been obvious to one of ordinary skill in the arts at the time the invention was made to combine the teachings of Norefors into those of Smolik, for the reason mentioned above.

11. Claims 1-9,11-15 and 17-19 rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/6370380 (Norefors et al.) in view US 2002/0176445 (Melpignano).

12. As to claim 1, Norefors teaches a method comprising the step of providing a mobile terminal with information identifying a first access node (APold) prior to handoff to a second access node (APnew). Note that an ID of the first node is inherently included in this information. The second node cannot communicate with the first node (as will be taught later this paragraph) without knowing the ID of the first node. The method further comprises the first access node receiving from the second access node a request for verification information (security token and mobile identity codes) provided by the mobile terminal to the second access node. The method further comprises

verifying the information (security token and mobile identity code) provided by the mobile terminal (see Norefors, column 2, lines 55-67 and column 3, lines 1-21). What is lacking from Norefors is the updating of candidate access node information after the mobile terminal has been verified. Melpignano teaches that access nodes (access points) periodically send updated candidate access node lists to mobile terminals (see Melpignano, paragraph 81). The motivation for doing this is also taught in Melpignano. Melpignano teaches that when an access node and a mobile terminal lose their connection; the mobile terminal can use the list to establish a connection with another access node (see Melpignano, paragraph 81). It would have been obvious to one of ordinary skill in the arts at the time the invention was made to combine the teachings of Melpignano into those of Norefors for the reasons mentioned above.

13. As to claim 2, Melpignano further teaches that the candidate access node list is sent out to multiple mobile terminals (see Melpignano, paragraph 81). This reads on the information being shared among mobile terminals in the mobile network. The term 'list' cited in paragraph 81 of Melpignano reads on the word 'table', as both are ways of presenting and storing information on multiple entities. Note that the teachings of Melpignano are further details on teachings already incorporated into Norefors in the rejection of claim 1.

14. As to claim 3, it is inherent that the network address of the first access node be included in the information sent to the mobile terminal. In the rejection of claim 1 it is taught that the second access node sends a request to the first access node upon

receiving the information from the mobile terminal. The second access node must know the network address of the first access node in order to make this request.

15. As to claim 4, Norefors further teaches that the information provided by the first access node and sent to the second access node comprises a security token (ticket) (see Norefors, column 2, lines 55-67 and column 3, lines 1-21).

16. As to claim 5, Norefors further teaches that the information sent to the second access node is verified by measuring the time delay during the handoff (see Norefors, column 3, lines 22-33).

17. As to claim 6, Norefors further teaches that timestamps recorded by both access nodes are used to measure the time delay (see Norefors, column 3, lines 22-33). Note that a second timestamp is inherent to the process. Two time values are needed to make the time delay measurement.

18. As to claim 7, Norefors further teaches that the information provided by the first access node and sent to the second access node comprises a mobile terminal identifier (mobile identity codes). The mobile terminal identifier is used in the verification process (see Norefors, column 2, lines 55-67 and column 3, lines 1-21 and figure 2).

19. As to claim 8, Norefors further teaches the authentication (using the mobile ID) of messages sent by the second access node (see Norefors, column 2, lines 55-67 and column 3, lines 1-21 and figure 2). Note that in later embodiments Norefors also teaches encrypted hash codes for all communications between the nodes (see Norefors, column 4, lines 24-39 and figures 4-5).

20. As to claim 9, Norefors further teaches a limit being placed on the number messages received from the mobile terminal prior to verification. This limit is achieved by using the time delay measurement (see Norefors, column 3, lines 22-33).

21. As to claim 11, Norefors teaches an access node (access point) with memory and processor means that execute the instructions to perform the step of providing a mobile terminal with information identifying a first access node (APold) prior to handoff to a second access node (APnew). Note that an ID of the first node is inherently included in this information. The second node cannot communicate with the first node (as will be taught later this paragraph) without knowing the ID of the first node. The instructions further comprise the first access node receiving from the second access node a request for verification information (security token and mobile identity codes) provided by the mobile terminal to the second access node. The instructions further comprise verifying the information (security token and mobile identity code) provided by the mobile terminal (see Norefors, column 2, lines 55-67 and column 3, lines 1-21). What is lacking from Norefors is the updating of candidate access node information after the mobile terminal has been verified. Melpignano teaches that access nodes (access points) periodically send updated candidate access node lists to mobile terminals (see Melpignano, paragraph 81). The motivation for doing this is also taught in Melpignano. Melpignano teaches that when an access node and a mobile terminal lose their connection; the mobile terminal can use the list to establish a connection with another access node (see Melpignano, paragraph 81). It would have been obvious to

one of ordinary skill in the arts at the time the invention was made to combine the teachings of Melpignano into those of Norefors for the reasons mentioned above.

22. As to claim 12, see the rejection of claim 4.

23. As to claim 13, see the rejection of claim 5.

24. As to claim 14, see the rejection of claim 7.

25. As to claim 15, see the rejection of claim 8.

26. As to claim 17, Norefors teaches a mobile terminal with memory and processor means to perform the step of receiving information identifying a first access node (APold) and a ticket (security token) prior to handoff to a second access node (APnew). Note that an ID of the first node is inherently included in this information. The second node cannot communicate with the first node (as will be taught later this claim) without knowing the ID of the first node. Norefors teaches storing the information. Norefors teaches providing the ticket and ID of the first node to the second node after handoff. Norefors teaches the second node verifying the ticket (security token) with the first node (see Norefors, column 2, lines 55-67 and column 3, lines 1-21). What is lacking from Norefors is the updating of candidate access node information after the mobile terminal has been verified. Melpignano teaches that access nodes (access points) periodically send updated candidate access node lists to mobile terminals (see Melpignano, paragraph 81). The motivation for doing this is also taught in Melpignano. Melpignano teaches that when an access node and a mobile terminal lose their connection; the mobile terminal can use the list to establish a connection with another access node (see Melpignano, paragraph 81). It would have been obvious to one of ordinary skill in the

arts at the time the invention was made to combine the teachings of Melpignano into those of Norefors for the reasons mentioned above.

27. As to claim 18, Norefors further teaches a timestamp that is used to measure time delay. This timestamp is part of the same information comprising the ticket (security token) (see Norefors, column 3, lines 22-33).

28. As to claim 19, see the rejection of claim 7.

29. Claims 10,16,20 and 28 rejected under 35 U.S.C. 103(a) as being unpatentable over US 2002/6370380 (Norefors et al.) in view US 2002/0176445 (Melpignano) as applied to claims 1,11 and 17 above, and further in view of US 2002/6487406 (Chang et al.). What is lacking is the use of IP devices as mobile terminals and IP routers as access nodes. The method and system of Norefors in view of Melpignano does not specify what type of wireless communication system is being used. Chang teaches that in wireless communication systems, IP devices (laptops) can be used as mobile terminals. Chang further teaches that IP routers are used to connect the mobile terminals to an IP network (see Chang, column 3, lines 60-67 and column 4, lines 1-67 and column 5, lines 1-60). The motivation for using this teaching can be found in Chang. Chang teaches that it is important for mobile terminals to have access to the Internet (see Chang, column 1, lines 16-30). It would have been obvious to one of ordinary skill in the arts at the time the invention was made to combine the teachings of Chang into those of Norefors in view of Melpignano for the reasons mentioned above.

Conclusion

30. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 1999/5884158 (Ryan et al.) teaches a cellular telephone authentication system using a digital certificate. US 2004/0266393 (Zhao et al.) teaches a method of system access to a wireless network. US 2002/6430414 (Sorokine et al.) teaches a soft handoff and wireless communication system for third generation CDMA systems. US 2004/6813508 (Shioda et al.) teaches an apparatus and method for mobile communication. US 1998/5854981 (Wallstedt et al.) teaches an adaptive neighbor cell list.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mazda Sabouri whose telephone number is 571-272-8892. The examiner can normally be reached on Monday-Friday from 9:00-5:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ahmad Matar can be reached on 571-272-7488. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mazda Sabouri
Examiner
Art Unit 2642

DUC NGUYEN
PRIMARY EXAMINER